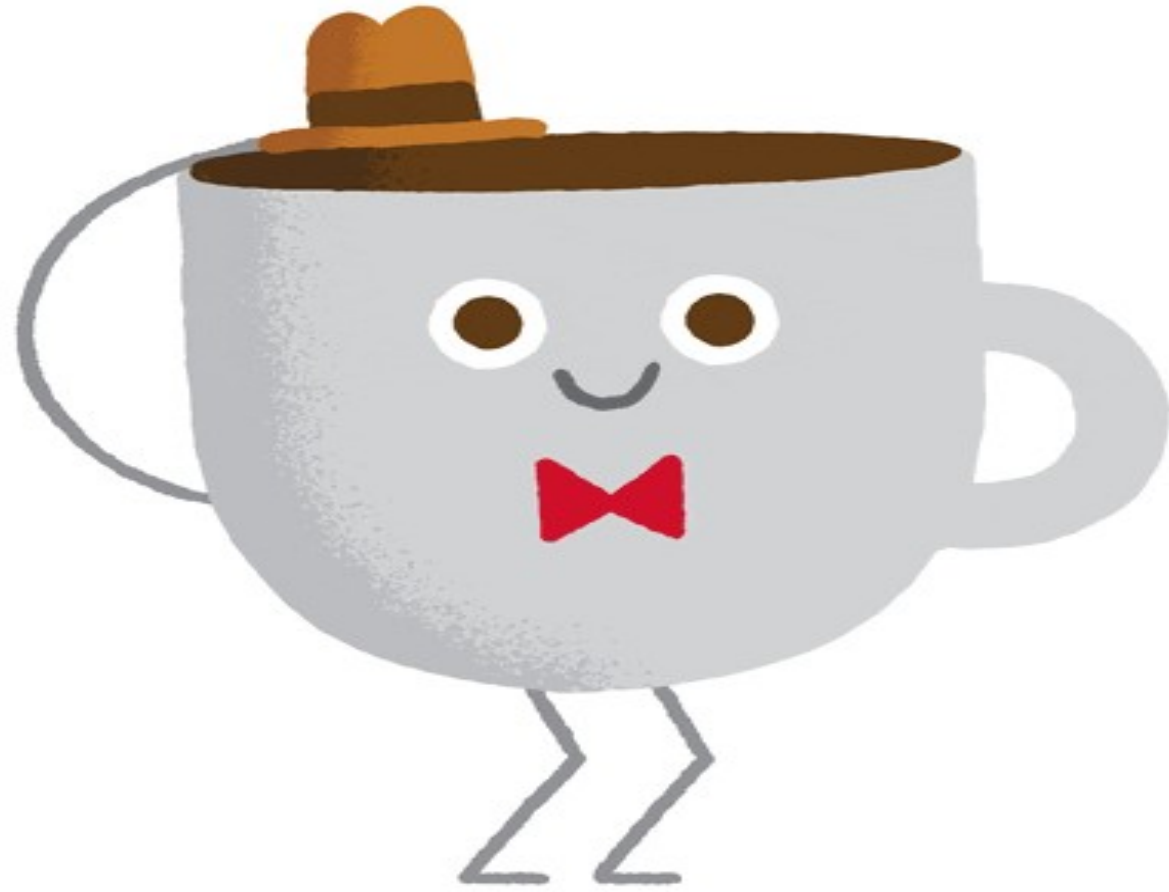
Armed Forces College of Medicine

AFCM

good morning
MG

Diseases of Salivary

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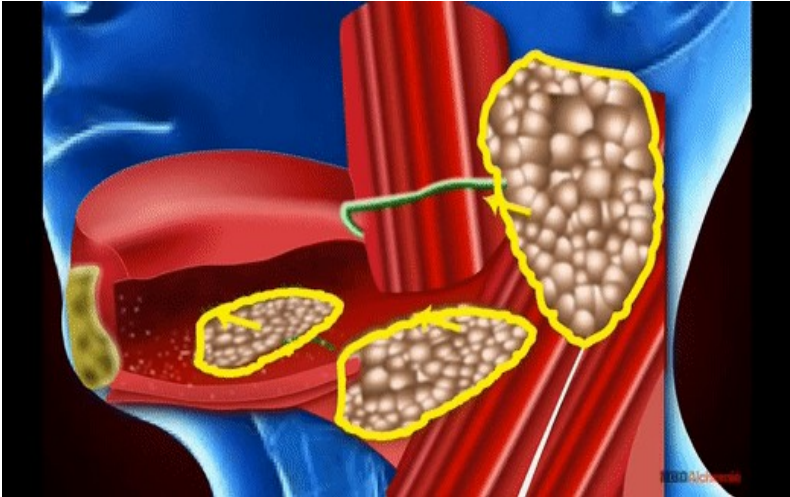
Prof. of Pathology

INTENDED LEARNING OBJECTIVES (ILO)

By the end of this lecture you will be able to:

- Describe pathologic features of different types of sialadenits and most common salivary gland tumours (Pleomorphic adenoma –Warthin tumour –Mucoepidermoid carcinoma)
- Classify salivary glands tumours
- Correlate pathologic features of salivary gland diseases with their clinical picture and complications

Lecture Plan

1. Part 1 (5mins): Causes of sialadenitis
2. Part 2 (10mins) :Pathologic features of types of sialadenitis
3. Part 3 (20 mins): Tumours of salivary glands
4. Lecture Quiz (5 min)

Sialadenitis

Def: Inflammation of the major salivary gland

Causes:

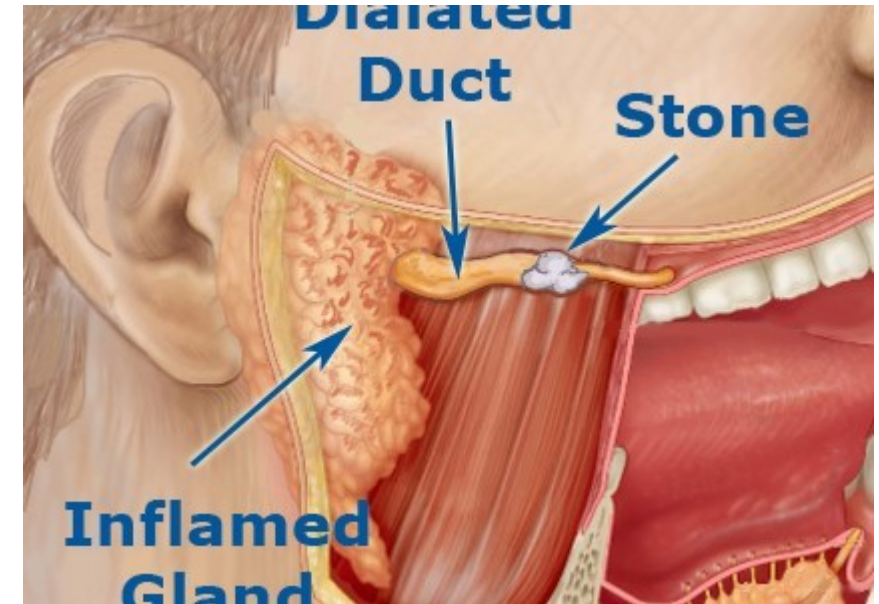
1. Ductal obstruction: **(Sialolithiasis)**
2. Infection:
   a-Viral (mumps) b-Bacterial

https://www.aafp.org/afp/2014/0601/hi-res/afp20140601p882-f7.jpg

Sialadenitis

1-Ductal obstruction :Sialolithiasis (Salivary calculi):

- Unilateral parotid or submandibular gland swelling.
- Acute ductal obstruction at meal time. Sudden, painful swelling.
- After meal: Pain +swelling ↓↓

http://salivarystonesmd.com/risk-factors-sailolithasis/

Sialadenitis

Infection-2

.a-Viral: Mumps

.**Incidence**: More common in children

Gross: Painful, bilateral parotid enlargement.

Complications:

A self-limited condition, but *in adults* following complications may occur:

- Orchitis (sometimes causes sterility).
- Inflammation of the ovary
- Pancreatitis, rare.

https://www.nhsdirect.wales.nhs.uk/assets/images/encyclopaedia/mumps3.jpg

Sialadenitis

:b- Bacterial

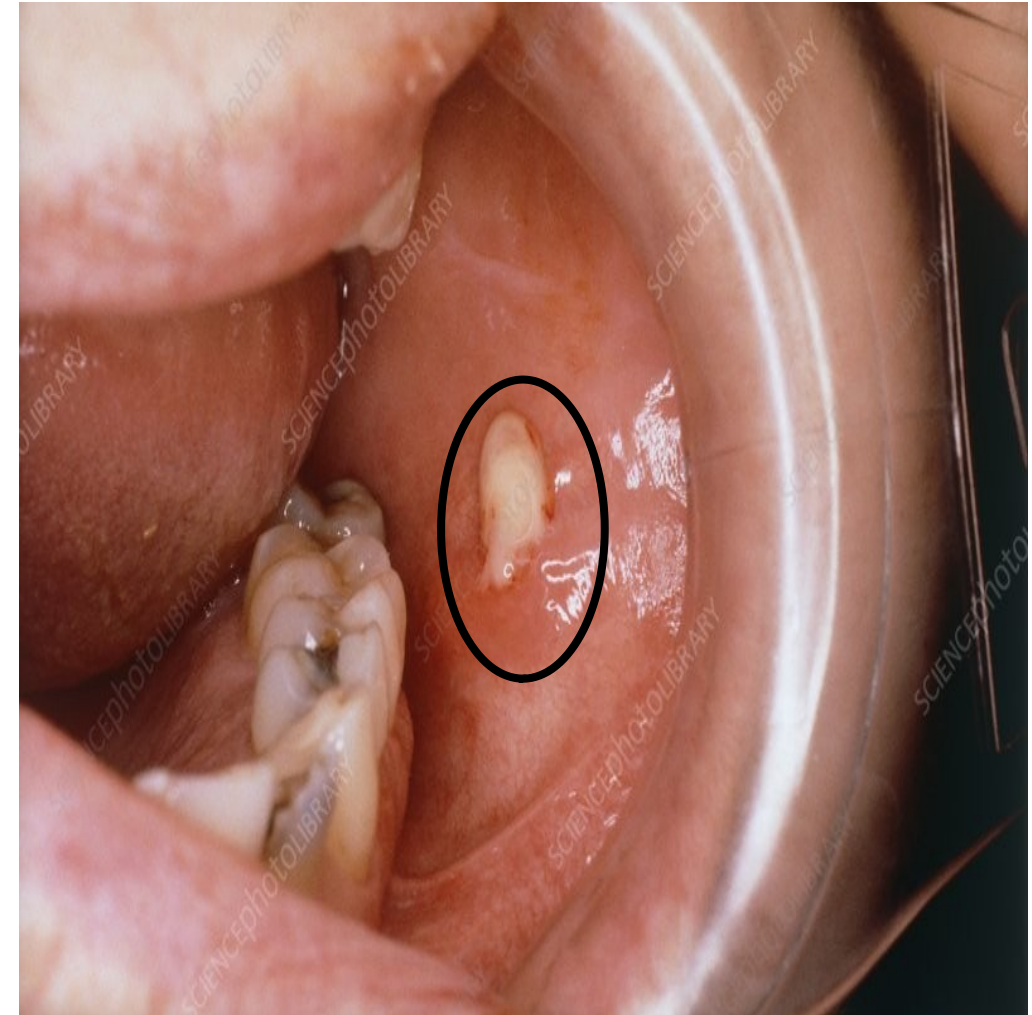
Pdf:

Obstruction of duct by

- Stones
- Impacted food debris
- Edema consequent to injury.

:Mic

Suppurative inflammation, with .abscess formation

https://media.sciencephoto.com/image/c0105981/800wm

Sialadenitis

utoimmune disease (Sjogren syndrome).

Def

Bilateral autoimmune destruction of ductal epithelia cells of lacrimal & salivary gland

C/P:

- Enlarged salivary glands
- Keratoconjunctivitis sicca (dry eyes),
- Xerostomia (dry mouth)
- Associated autoimmune dis. eg.

https://img.medscapestatic.com/pi/meds/ckb/16/39216tn.jpg

https://www.hygeia.gr/media/inlinepics/sn1.jpg

Sialadenitis

utoimmune disease (Sjogren syndrome).

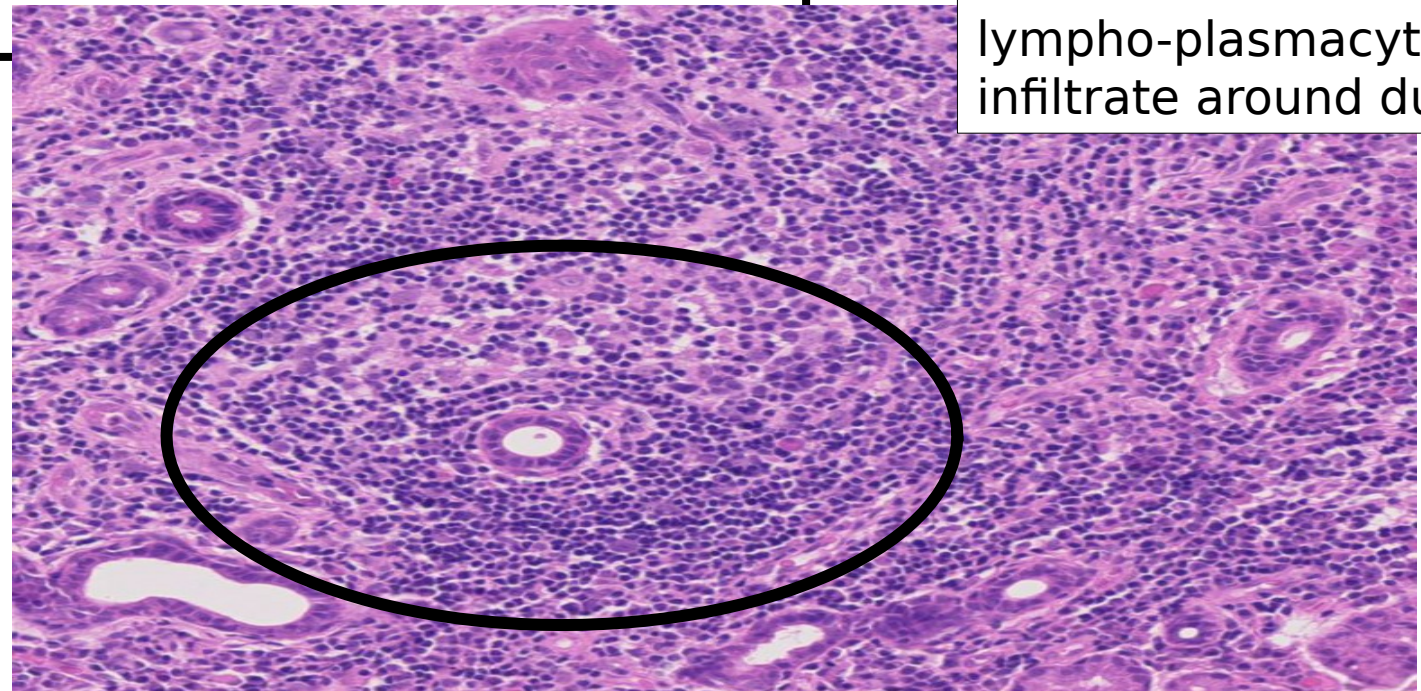
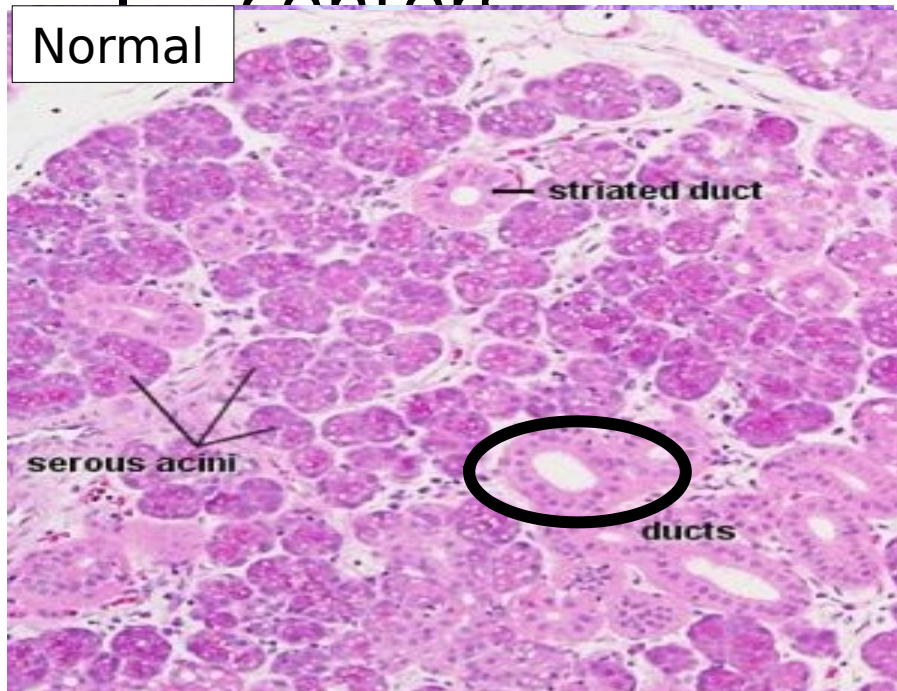
Mic :

- Intense lympho-plasmacytic infiltrate
- +/-Lymphoid follicles with germinal centers

https://smw.ch/resource/jf/jimg/780/780/ratio/journal/file/view/article/smw/en/smw.2015.14168/8dceba7b659350ae69be58a97c7bd104b0c71da1/smw_14168_fig_04_conv.jpg/

Sialadenitis (*Quiz*)

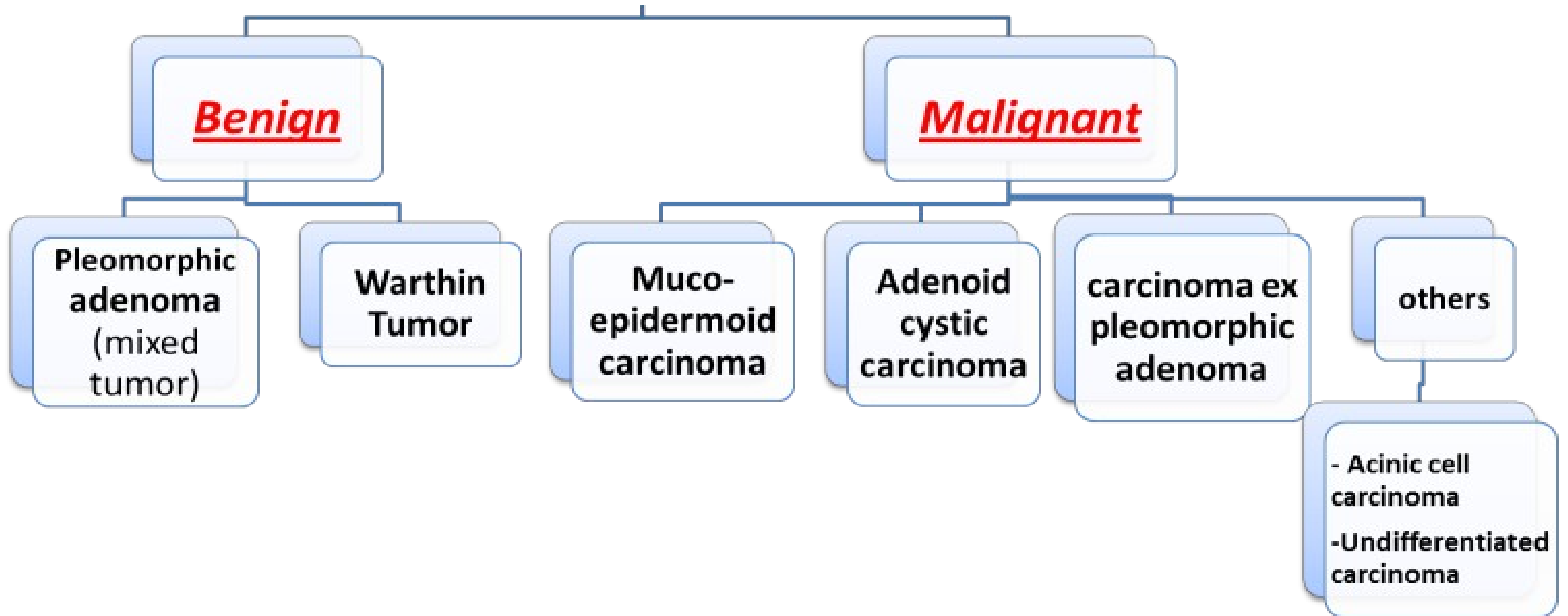
Match

Sialithiasis	a. Orchitis
Mumps	b. Dry eyes –Dry mouth
Sjogren’s Syndrome	c. Herpitic Ulcers
	d. Obstruction by stone
	e. Viral infection
	f. Autoimmune

Sialadenitis (*Quiz*)

Match

Sialithiasis **d**	a. Orchitis
	b. Dry eyes –Dry mouth
Mumps **a, e**	c. Herpitic Ulcers
	d. Obstruction by stone
Sjogren's Syndrome **b,f**	e. Viral infection
	f. Autoimmune

Tumours of Salivary glands

- ***Benign***
  - Pleomorphic adenoma (mixed tumor)
  - Warthin Tumor
- ***Malignant***
  - Muco-epidermoid carcinoma
  - Adenoid cystic carcinoma
  - carcinoma ex pleomorphic adenoma
  - others
    - Acinic cell carcinoma
    - Undifferentiated carcinoma

Benign Tumours of Salivary gland

Mixed salivary gland tumour

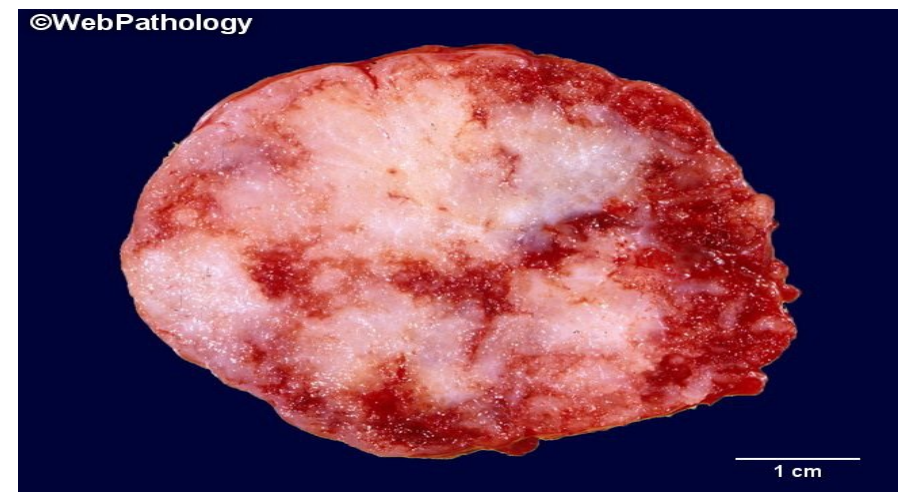
Warthin's

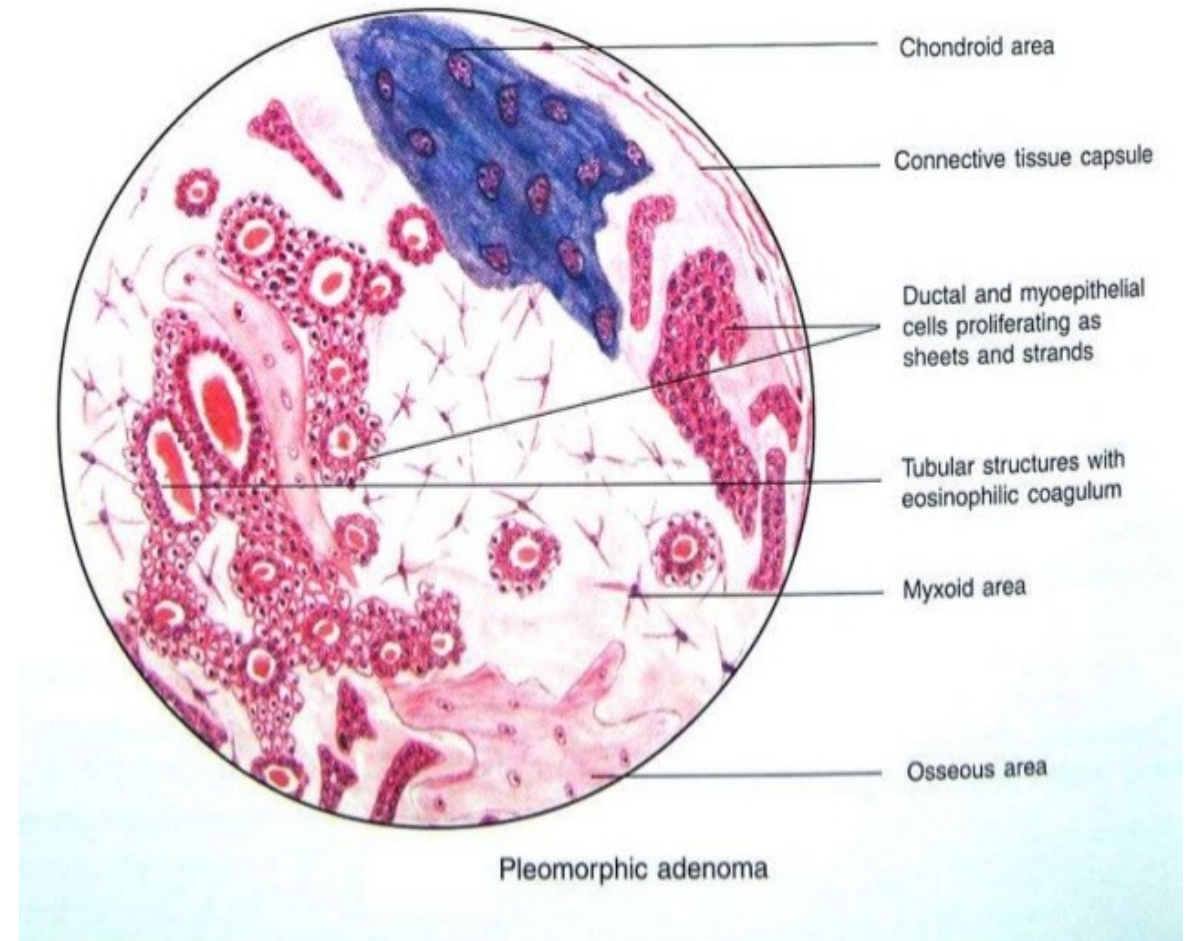
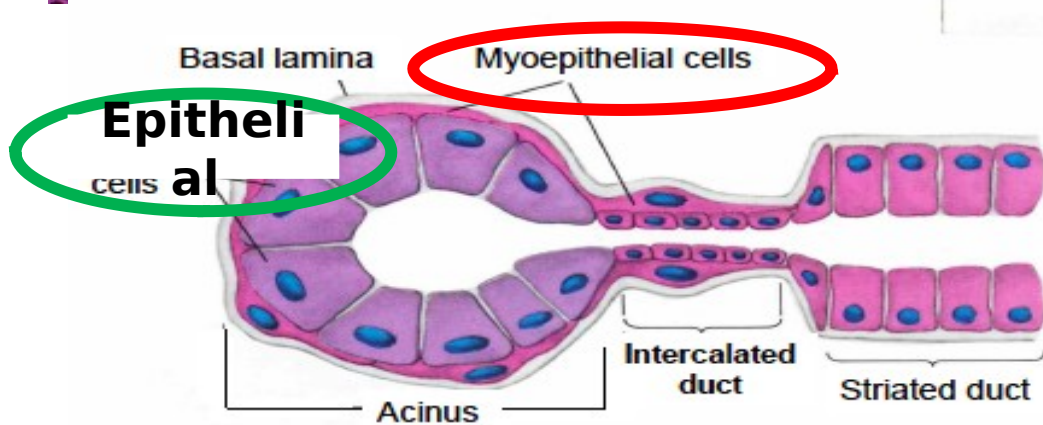
Pleomorphic adenoma
(Benign mixed salivary gland tumour)

- Most common salivary gland tumor.
- Parotid is commonest site.
- More in females.
- "Mixed tumor" due to presence of epithelial & myoepithelial cells + fibromyxoid & cartilage-like elements

:Gross

- Encapsulated,
- Cut section: lobulated, firm, solid, with myxoid areas.

https://www.teethdictionary.com/wp-content/uploads/2019/01/jLybUj9.jpg

https://www.webpathology.com/slides-13/slides/SalivaryGland_PleomorphicAdenoma_Gross2_resized.jpg

Pleomorphic adenoma
(Benign mixed salivary gland tumour)

MUCOUS ACINI
SEROUS DEMILUNES
INTERCALATED DUCTS
MYOEPITHELIAL CELLS
STRIATED DUCTS
SEROUS ACINI

Basal lamina
Myoepithelial cells
Epithelial
cells
Intercalated duct
Striated duct
Acinus

https://d1yboe6750e2cu.cloudfront.net/i/
f0782939402523391aaae483bd2f6ecb77d96696

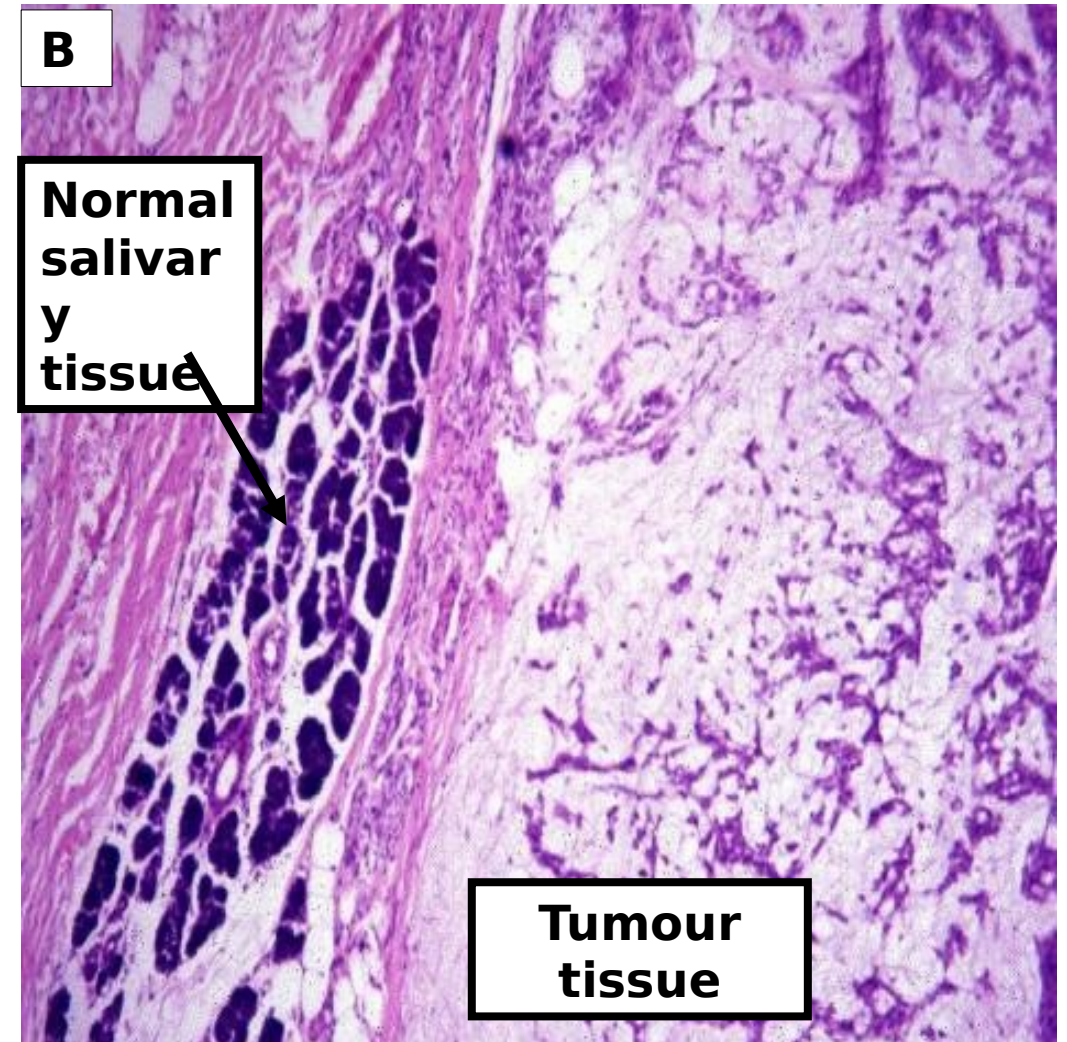
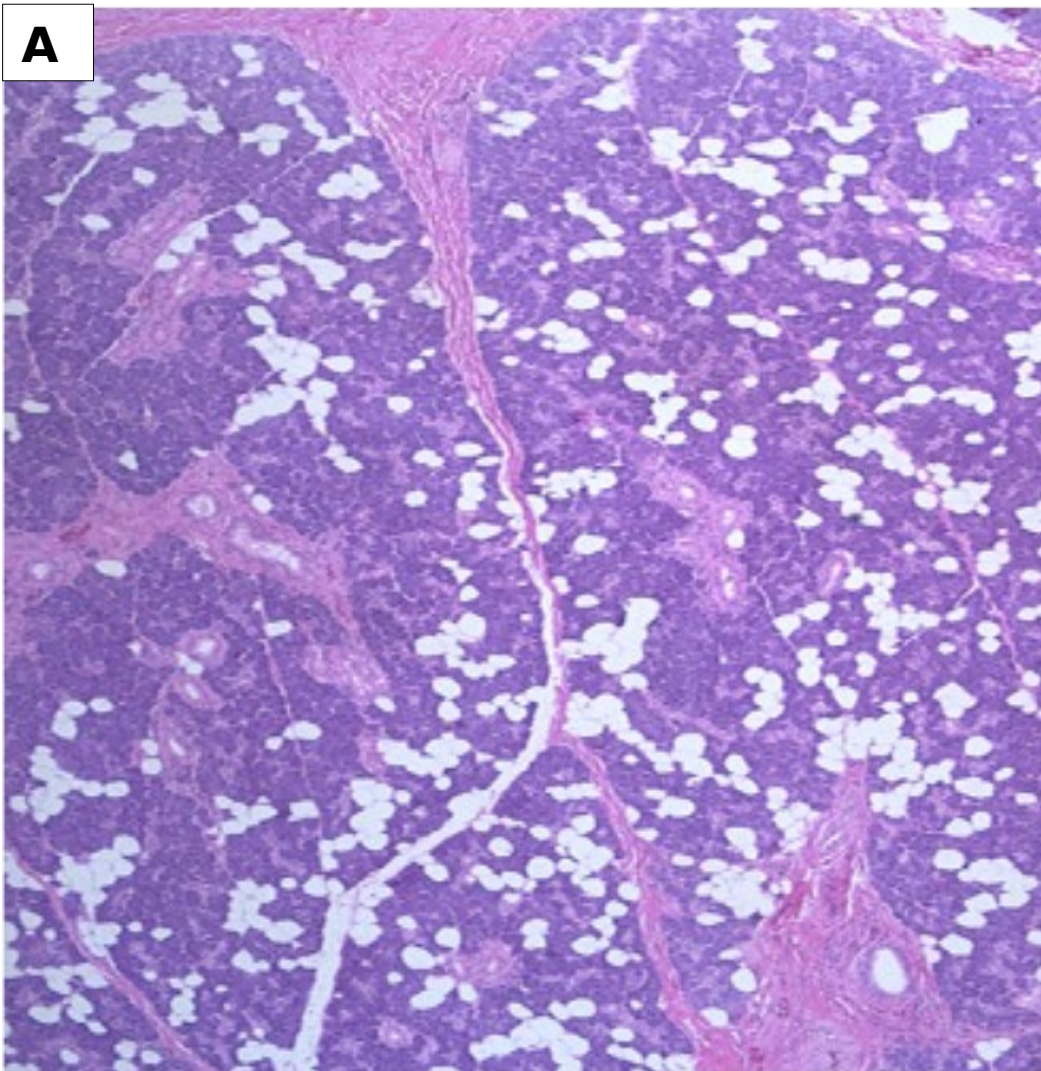
https://image.slidesharecdn.com/salivaryglandtumors-150912063235-lva1-app6892/95/salivary-gland-tumors-51-638.jpg?cb=1442040002

Pleomorphic adenoma
(Benign mixed salivary gland tumour)

A

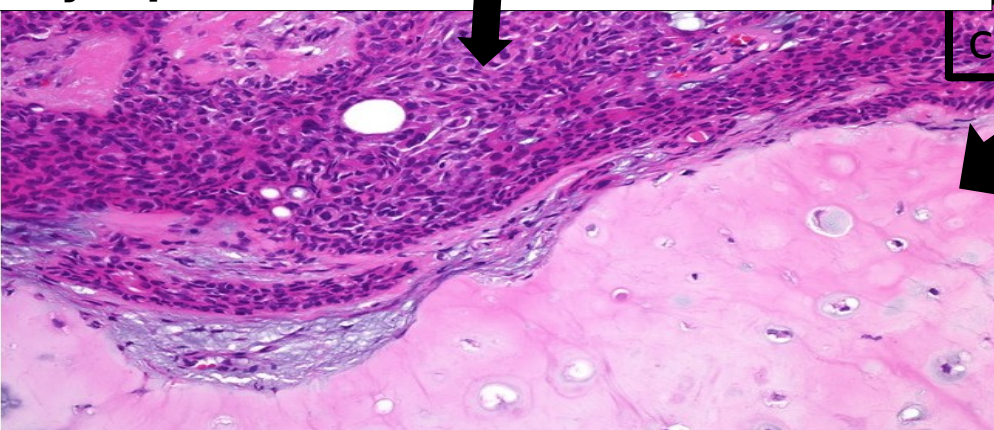
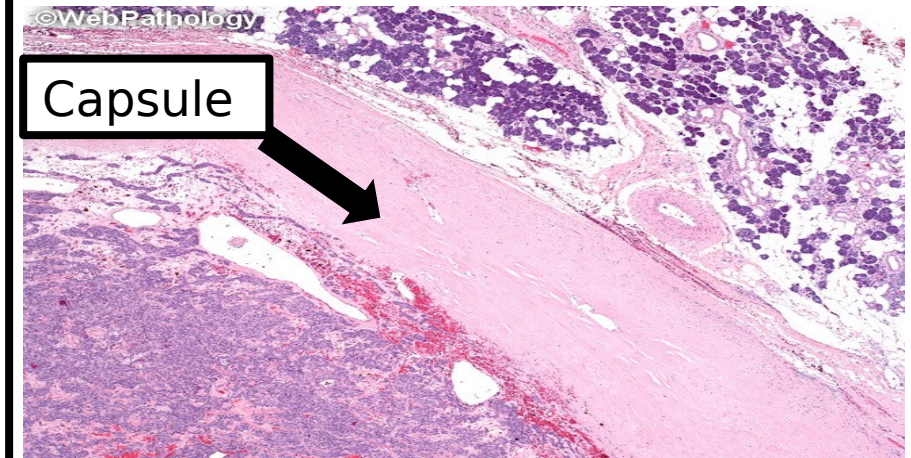
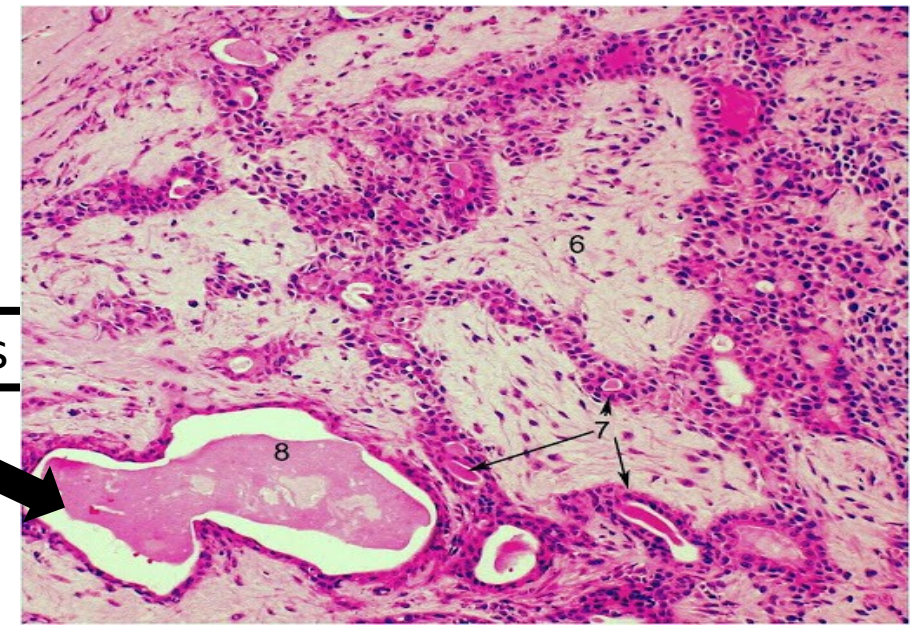
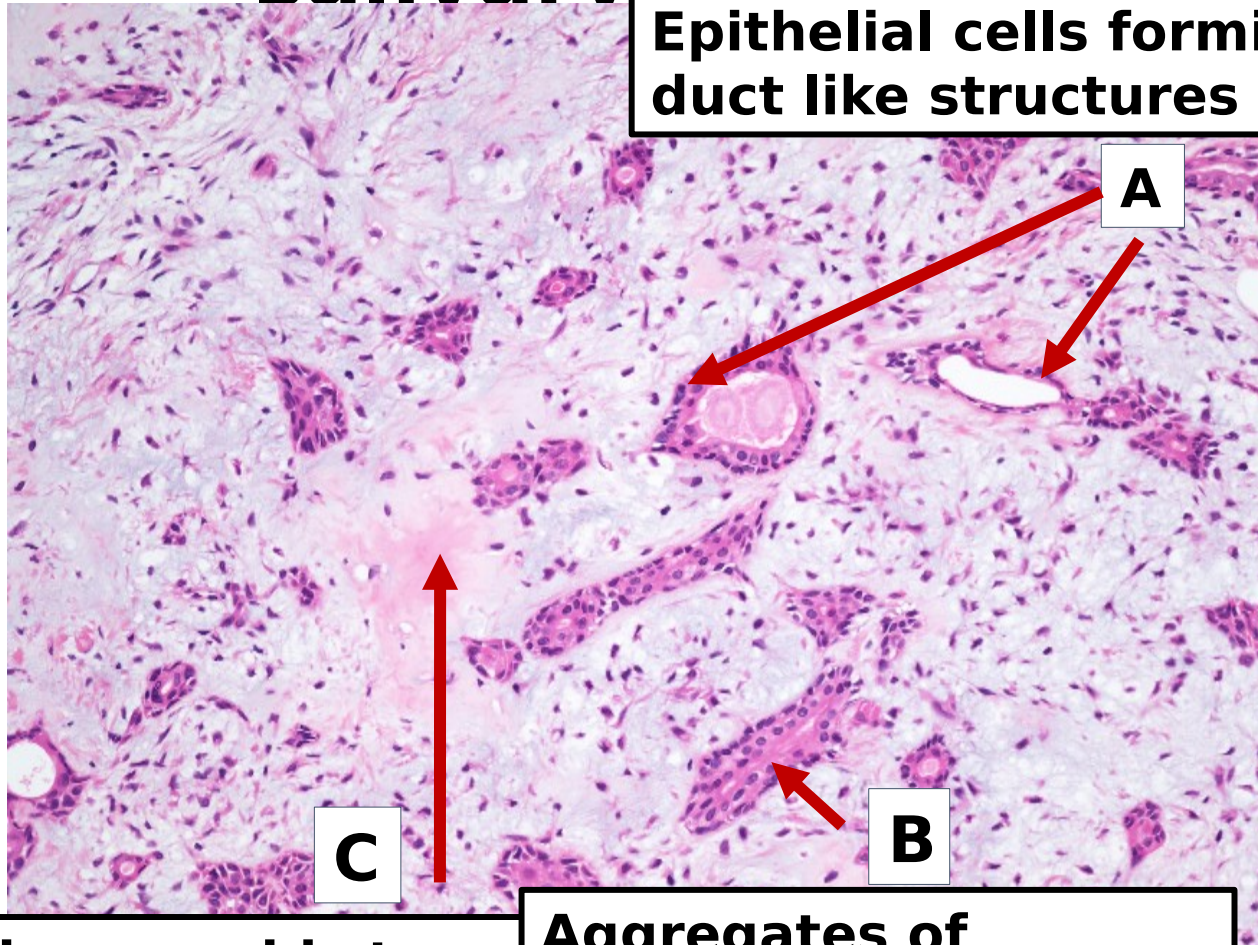
B

Normal salivar y tissue

Tumour tissue

Pleomorphic adenoma
(Benign mixed salivary gland tumour)

:Mic

- Encapsulated tumour
- Aggregates & sheets of benign epithelial & myoepithelial cells with duct like structures
- Stroma: Fibromyxoid and cartilaginous areas

https://www.webpathology.com/image.asp?n=14&Case=966

https://www.webpathology.com/slides-13/slides/Pleomorphic%20Adenoma_CartilagenousStroma2.jpg

Pleomorphic adenoma (Benign mixed salivary tumour)

Epithelial cells forming duct like structures

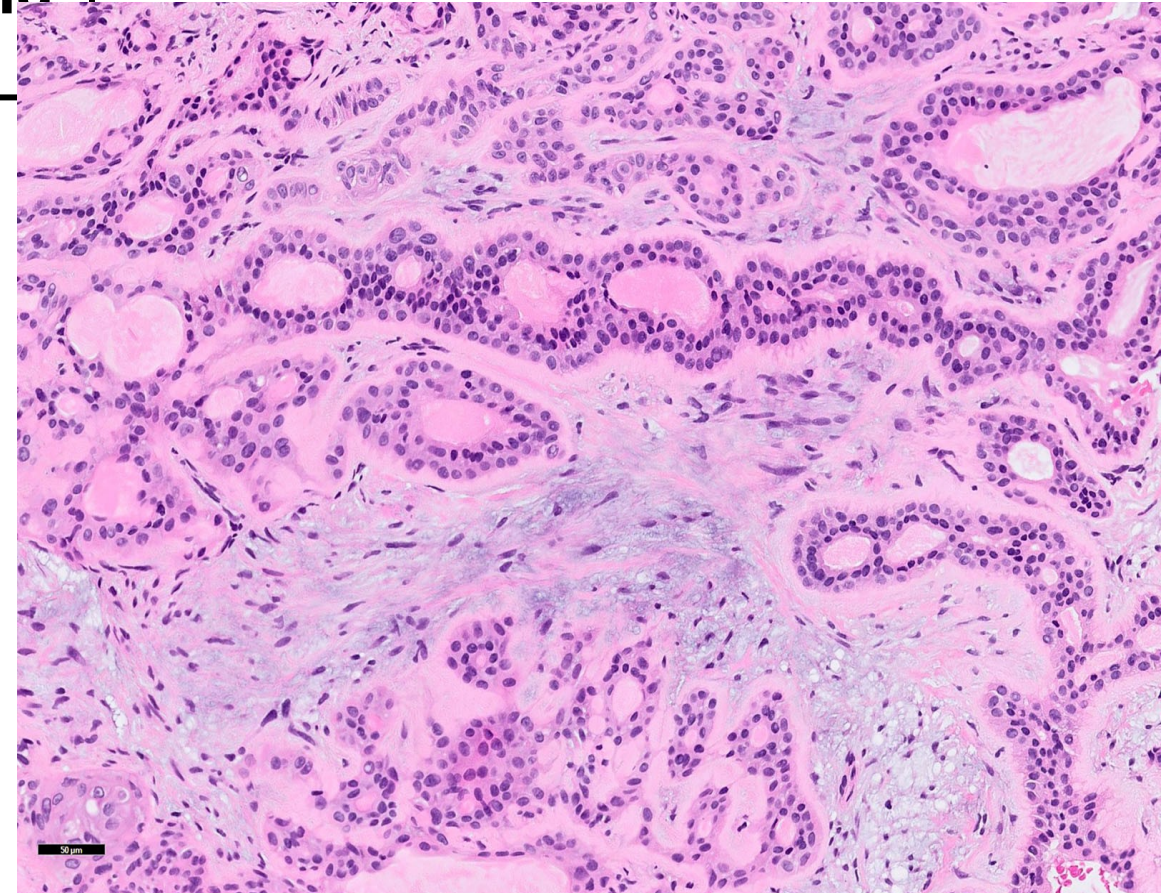
A

B

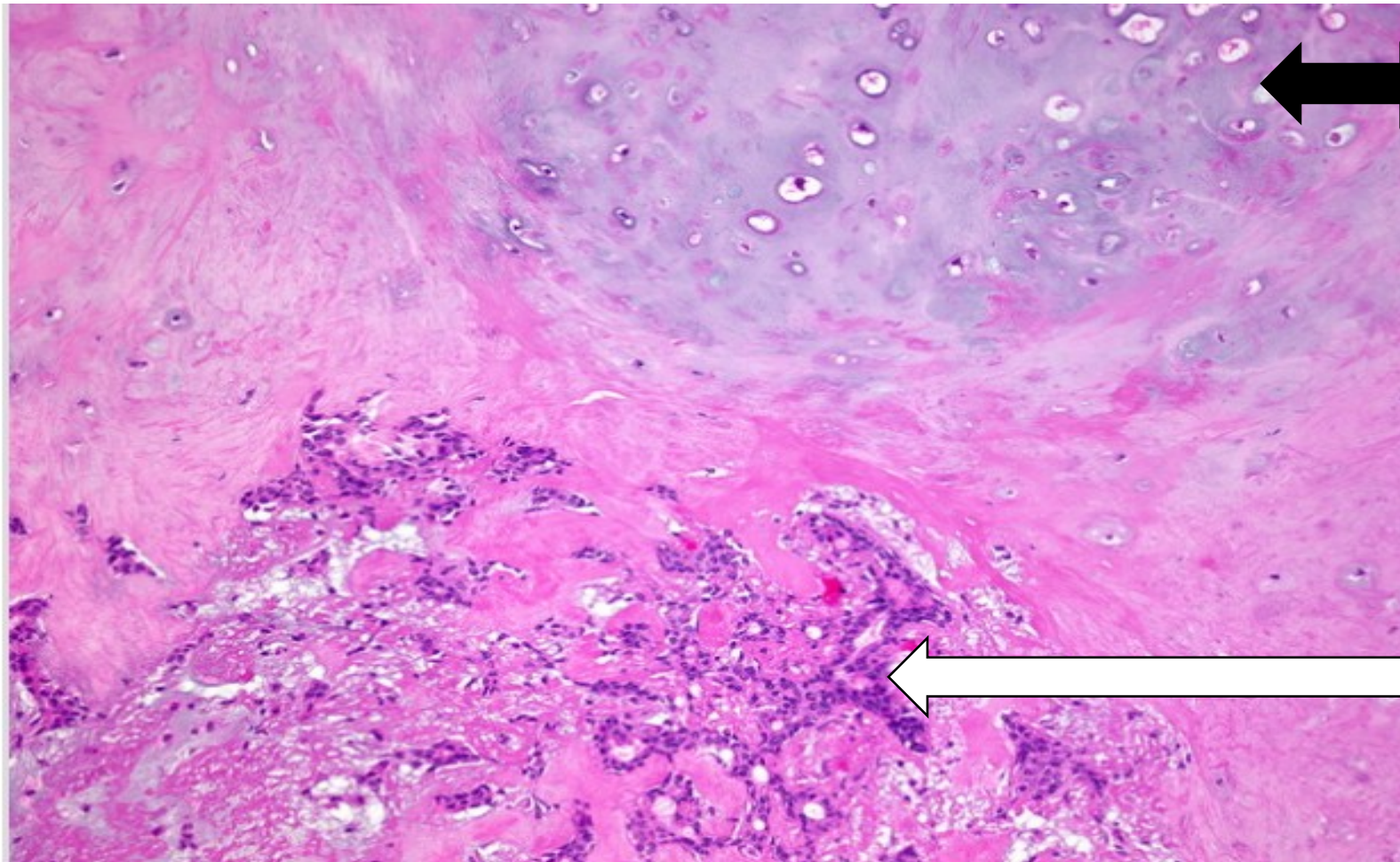
C

Fibromyxoid stroma

Aggregates of epithelial & Myoepithelial cells

https://prod-images.static.radiopaedia.org/images/2[illegible]465574/[illegible]d813f2e0353702bf23c8e47eaf30b.jpg

Pleomorphic adenoma: biphasic population of epithelial and mesenchymal cells, ducts with luminal and myoepithelial cells (H&E, ×20)

https://www.pathologyoutlines.com/imgau/salivaryglandspleomorphicadenomabychkov01.jpg

Pleomorphic adenoma
(Benign mixed salivary gland tumour)

cartilaginous areas

Aggregates of epithelial & Myoepithelial cells

Pleomorphic adenoma
(Benign mixed salivary gland tumour)

Is it benign
or
malignant?

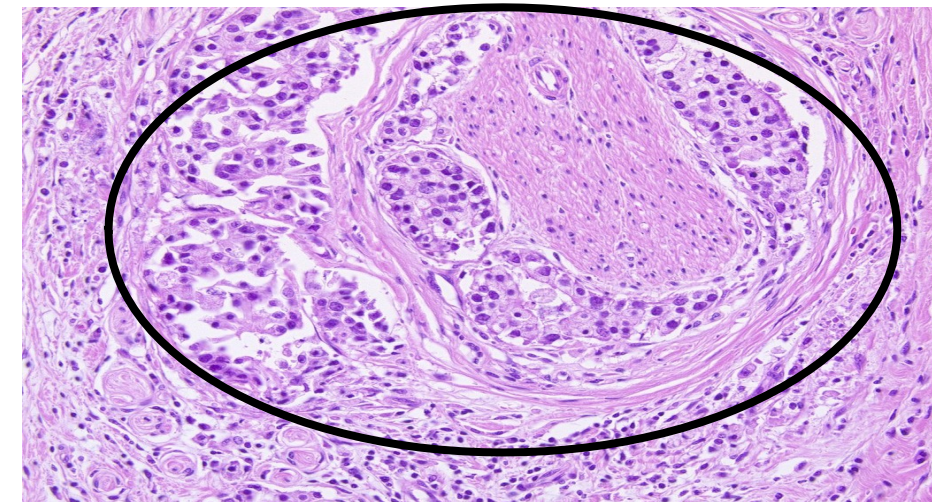
May it
recur ?

How do I know it
may have
transformed to
malignant

Pleomorphic adenoma
(Benign mixed salivary gland tumour)

- Budding of tumor cells beyond capsule →↑Recurrence.
- **Malignant transformation to carcinoma ex pleomorphic adenoma (malignant mixed salivary gland tumour)** eg. area of adenocarcinoma in a pleomorphic adenoma evidenced by
  - Rapid increase in size with fixation

https://www.uaz.edu.mx/histo/Webpatutah/JPEG2/HN013.JPG

https://pbs.twimg.com/media/CZNhQzpWQAEKMNc.jpg

Warthin's tumour

Papillary cystadenoma lymphomatosum

Nature: Benign

:Incidence

- More in males.

:Gross

- Encapsulated.
- Cut section cystic space +\- papillae.

https://pbs.twimg.com/media/CG_AnCsW8AAvDuC.jpg

Papillary cystadenoma lymphomatosum (Warthin's tumour)

Which is the lesion A or B ?

Describe

A

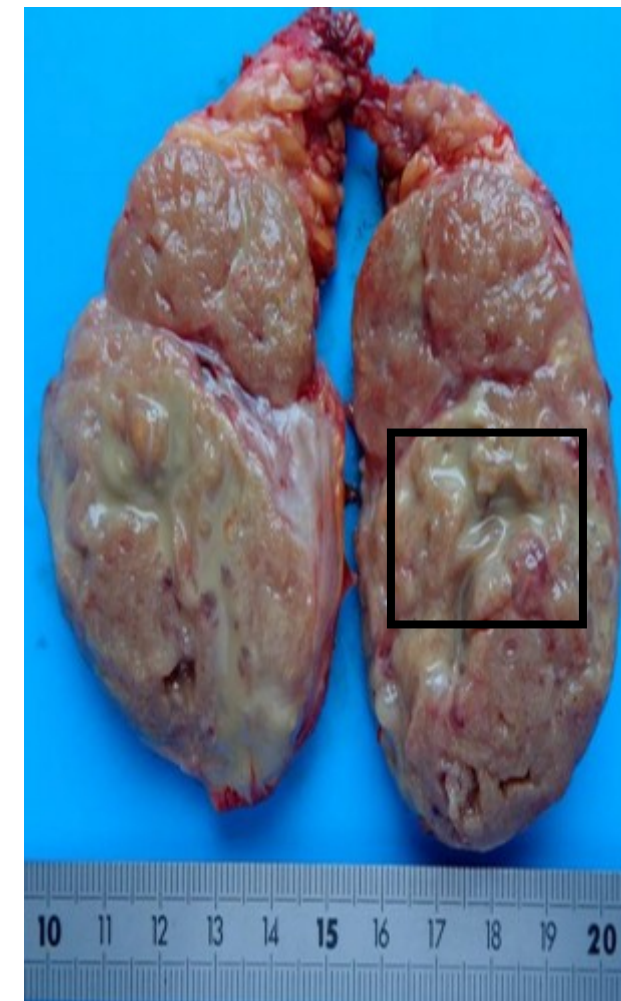
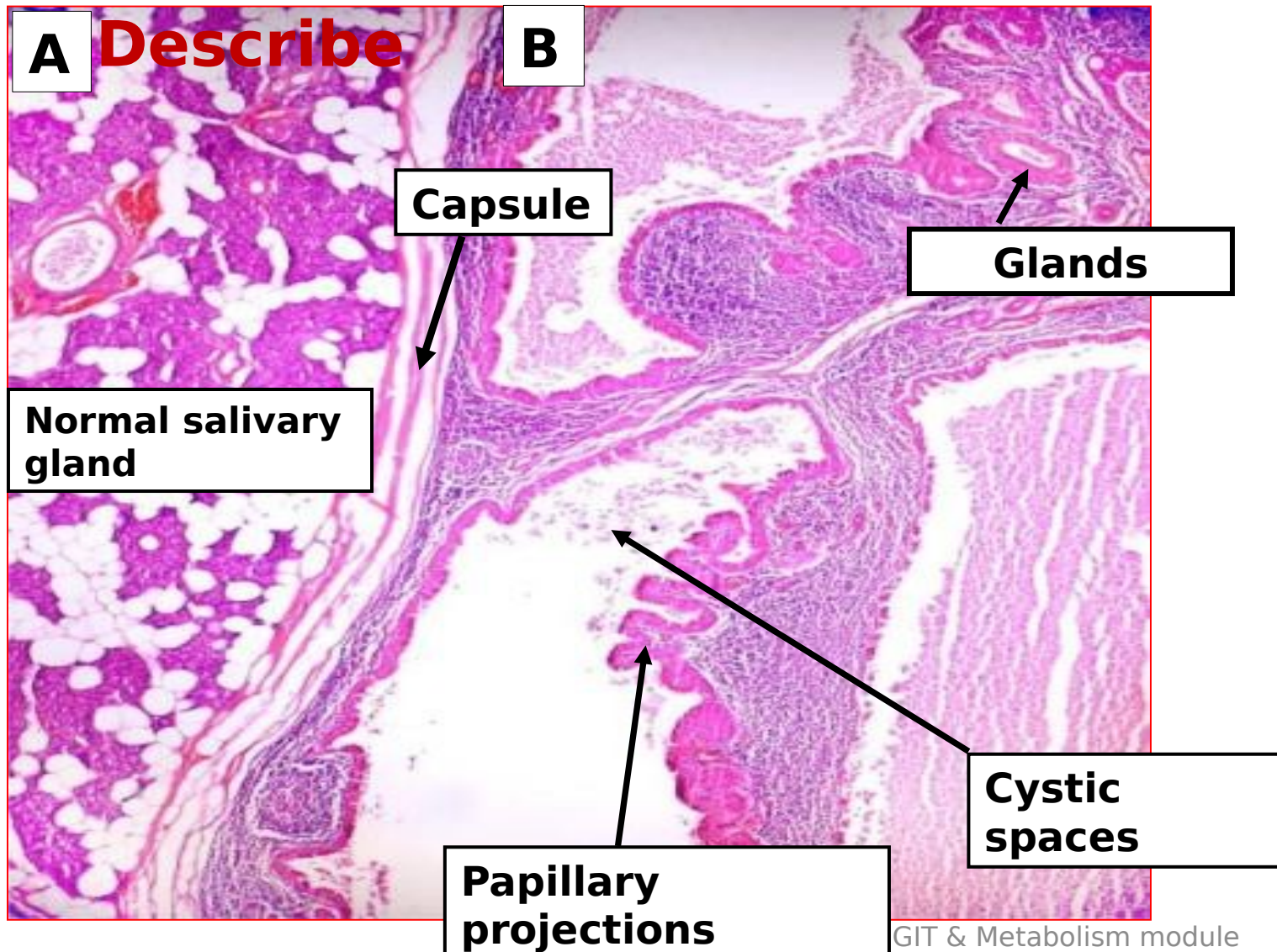
B

Capsule

Glands

Normal salivary gland

Cystic spaces

Papillary projections

https://pbs.twimg.com/media/CG_AnCsW8AAvDuC.jpg

Warthin's tumour

Papillary cystadenoma lymphomatosum

- Cystic spaces
- Lined by a double layer of oncocytic epithelium
- With papillary projections.
- Stroma: Rich in lymphocytes +/- lymphoid follicles

https://live.staticflickr.com/8177/8028710404_6650e2a214_b.jpg

https://www.pathpedia.com/education/eatlas/histopathology/salivary_glands/warthin_tumor/warthin-tumor-parotid-[2-pa003-2].jpeg?

Papillary cystadenoma lymphomatosum (Warthin's tumour)

Cystic

PATHPEDIA.COM

A

Papillary projections

B

C

Lymphoid component

Double layer of eosinophilic (oncocytic) cells

QIAO'S PATHOLOGY

D

A

C

Cystic space

lymphocytes

...stopathology/salivary_glands/warthin_tumor/warthin-tumor-parotid-[1-pa005-1].jpeg?width=600&height=450&format=4

https://live.staticflickr.com/8319/8050506297_1987e75f09_b.jpg

Benign Tumours of salivary gland *(Quiz)*

Choose from the table on the right features that match these tumours

Warthin Tumour	Pleomorphic adenoma

a. Epithelial – myoepithelial aggregates
b. Papillary projections
c. Malignant
d. Cartilaginous areas
e. Benign
f. Lymphoid stroma
g. Capsule
h. Budding & recurrence
i. Oncocytic cells

Benign Tumours of salivary gland *(Quiz)*

Choose from the table on the right features that match these tumours

Warthin Tumour

b
e
f
g
i

Pleomorphic adenoma

a
d
e
g
h

a. Epithelial – myoepithelial aggregates
b. Papillary projections
c. Malignant
d. Cartilaginous areas
e. Benign
f. Lymphoid stroma
g. Capsule
h. Budding & recurrence
i. Oncocytic cells

Malignant Tumours of Salivary gland

Examples

Malignant Mixed salivary gland tumour

Mentioned with pleomorphic adenoma

Mucoepidermoid carcinoma

Mucoepidermoid Carcinoma

Most common <u>primary malignant</u>

.salivary gland tumor

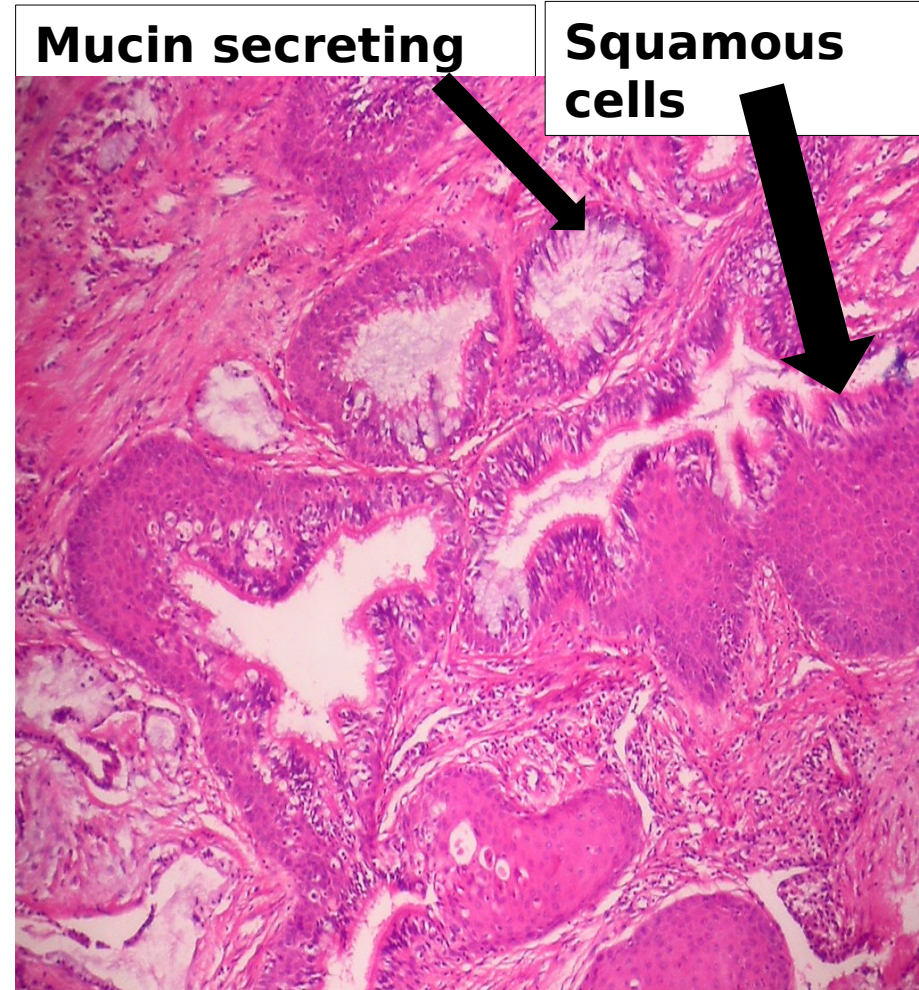
<u>Gross</u> : infiltrative growth± mucin

.filled spaces

<u>:Mic</u>

Mixture of malignant squamous cells,

mucin secreting cells and intermediate

.cells

https://farm8.staticflickr.com/7166/6499870613_5307334e99_b.jpg

Malignant tumours of salivary gland *(Quiz)*

Enumerate signs of malignant transformation of pleomorphic adenoma to carcinoma ex pleomorphic adenoma (malignant mixed salivary gland tumour)

Malignant tumours of salivary gland *(Quiz)*

Enumerate signs of malignant transformation of pleomorphic adenoma to carcinoma ex pleomorphic adenoma (malignant mixed salivary gland tumour)

- Rapid increase in size with fixation.
- Facial nerve paralysis.
- lymph node enlargement.

Key points

- **Types of sialadenitis**
- **Features of Sjogren's syndrome**
- **Pathologic features of benign and malignant salivary gland tumours**

Suggested Textbooks

Neil D. salivary gland disases In Robbins and Cotran pathologic basis of disease, 9th edition. Kumar, Abbas & Aster (eds). Elsevier Saunders. Pages 835 to 837.

Thank You